Refine Search

Search Results -

Terms	Documents
L6 and "gps"	5

Database: US Pre-Grant Publication Full-Text Database; US Patents Full-Text Database; US OCR Full-Text Database; EPO Abstracts Database; JPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

Search: L7

Refine Search | Recall Text | Clear | Interrupt

Search History

DATE: Wednesday, February 22, 2006 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=PGPB,USPT; THES=ASSIGNEE; PLUR=YES; OP=OR			
L7	L6 and "gps"	5	L7
L6	(learn$ or "ai" or (artificial$ adj intelligent$) or (neural adj network$)).clm. and l1	53	L6
L5	L4 and "gps"	2	L5
L4	L2 and (learn$ or "ai" or (artificial$ adj intelligent$) or (neural adj network$)).clm.	20	L4
L3	L2 and gps.clm.	5	L3
L2	l1 and (control$ with transmi$ with signal$).clm. and ((electronic$ or electrical$) adj signal$).clm.	2436	L2
L1	(control$ with transmi$ with signal$).clm. and (electronic? or electrical$) adj signal?	5354	L1

END OF SEARCH HISTORY

Hit List

First Hit | Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Search Results - Record(s) 1 through 5 of 5 returned.

☐ 1. Document ID: US 20030197594 A1

Using default format because multiple data bases are involved.

L7: Entry 1 of 5 File: PGPB Oct 23, 2003

PGPUB-DOCUMENT-NUMBER: 20030197594
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030197594 A1

TITLE: System and method for wireless control of home electronic systems based on location

PUBLICATION-DATE: October 23, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Olson, Thomas R.	Holland	MI	US
Benson, Michael R.	Holland	MI	US
Wright, Thomas S.	Holland	MI	US
Geerlings, Steven L.	Zeeland	MI	US

US-CL-CURRENT: 340/5.61; 340/5.71

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw De

☐ 2. Document ID: US 20030168838 A1

L7: Entry 2 of 5 File: PGPB Sep 11, 2003

PGPUB-DOCUMENT-NUMBER: 20030168838
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030168838 A1

TITLE: Methods for controlling a system in a vehicle using a transmitting/receiving transducer and/or while compensating for thermal gradients

PUBLICATION-DATE: September 11, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Breed, David S.	Boonton Township	NJ	US
DuVall, Wilbur E.	Kimberling City	MO	US

Johnson, Wendell C. Signal Hill CA US

US-CL-CURRENT: 280/735

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

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☐ 3. Document ID: US 20010020777 A1

L7: Entry 3 of 5 File: PGPB Sep 13, 2001

PGPUB-DOCUMENT-NUMBER: 20010020777
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20010020777 A1

TITLE: Methods for controlling a system in a vehicle using a transmitting/receiving transducer and/or while compensating for thermal gradients

PUBLICATION-DATE: September 13, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Johnson, Wendell C.	Signal Hill	CA	US
Du Vall, Wilbur E.	Kimberling City	MO	US
Breed, David S.	Boonton Township	NJ	US

US-CL-CURRENT: 280/735; 180/273

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

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☐ 4. Document ID: US 6856876 B2

L7: Entry 4 of 5 File: USPT Feb 15, 2005

US-PAT-NO: 6856876
DOCUMENT-IDENTIFIER: US 6856876 B2

TITLE: Methods for controlling a system in a vehicle using a transmitting/receiving transducer and/or while compensating for thermal gradients

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

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☐ 5. Document ID: US 6517107 B2

L7: Entry 5 of 5 File: USPT Feb 11, 2003

US-PAT-NO: 6517107
DOCUMENT-IDENTIFIER: US 6517107 B2
** See image for Certificate of Correction **

TITLE: Methods for controlling a system in a vehicle using a transmitting/receiving

transducer and/or while compensating for thermal gradients

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw De

Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Terms	Documents
L6 and "gps"	5

Display Format: - Change Format

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L3: Entry 2 of 5 File: PGPB Jan 1, 2004

PGPUB-DOCUMENT-NUMBER: 20040001720
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040001720 A1

TITLE: Satellite-based mobile communication system

PUBLICATION-DATE: January 1, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Krill, Jerry A.	Ellicott City	MD	US
Duncan, Donald D.	Silver Spring	MD	US
Frank, Joe	Potomac	MD	US
Moore, Craig R.	Lisbon	MD	US
Cipriano, Joseph	Springfield	VA	US
Sova, Raymond M.	Owings Mills	MD	US

APPL-NO: 10/317456 [PALM]
DATE FILED: December 12, 2002

RELATED-US-APPL-DATA:
Application is a non-provisional-of-provisional application 60/392309, filed June 27, 2002,
Application is a non-provisional-of-provisional application 60/420553, filed October 23, 2002,

INT-CL-PUBLISHED: [07] H04 B 10/00

US-CL-PUBLISHED: 398/125; 398/121
US-CL-CURRENT: 398/125; 398/121
optic 130-131
REPRESENTATIVE-FIGURES: 1

ABSTRACT:

A communications system for wireless transceiving of information, comprising at least one multiple beam scanning array transceiver located in a satellite for wirelessly transceiving the information; and at least two terminals at diverse locations capable of wirelessly transceiving the information between the terminals and the satellite. The multiple beam scanning array transceiver can be optically based, and contain micro-mirrors or optical switches. Also disclosed is an apparatus for determining atmospheric conditions for use in adjusting the multiple beam scanning array transceiver parameters.

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of the co-pending U.S. Provisional patent applications No. 60/392,309 filed on Jun. 27, 2002 and No. 60/420,553 filed on Oct. 23, 2002 herein incorporated by reference.

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L3: Entry 5 of 5 File: USPT Nov 5, 2002

US-PAT-NO: 6477154
DOCUMENT-IDENTIFIER: US 6477154 B1

TITLE: Microcellular mobile communication system

DATE-ISSUED: November 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cheong; Jong Min	Seoul			KR
Kim; Tae Gue	Seoul			KR
Seo; Sang Hoon	Seoul			KR
Lim; Jae Sung	Seoul			KR
Park; Sun	Seoul			KR

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
SK Telecom Co., Ltd.	Seoul			KR	03

APPL-NO: 09/138470 [PALM]
DATE FILED: August 14, 1998

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
KR	97-38788	August 14, 1997

INT-CL-ISSUED: [07] H04 B 7/216, H04 J 3/16, H04 J 14/00, H04 Q 7/00, H04 Q 7/20

US-CL-ISSUED: 370/328; 370/467, 359/109, 359/115, 359/118, 375/130, 375/140, 375/257, 455/444, 455/436, 455/439
US-CL-CURRENT: 370/328; 370/467, 375/130, 375/140, 375/257, 398/164, 455/436, 455/439, 455/444

FIELD-OF-CLASSIFICATION-SEARCH: 370/320, 370/328, 370/331, 370/334, 370/335, 370/342, 370/467, 359/109, 359/115, 359/118, 359/135-136, 375/130, 375/140, 375/257, 455/436, 455/439, 455/442, 455/444, 455/450-452
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	5280472	January 1994	Gilhousen et al.	370/18
☐	5303287	April 1994	Laborde	379/59
☐	5400391	March 1995	Emura et al.	379/59
☐	5424864	June 1995	Emura	359/172
☐	5761619	June 1998	Danne et al.	455/422
☐	5969837	October 1999	Farber et al.	359/132

ART-UNIT: 2665

PRIMARY-EXAMINER: Hsu; Alpus H.

ASSISTANT-EXAMINER: Nguyen; Toan

ATTY-AGENT-FIRM: Sheridan Ross P.C.

ABSTRACT:

A microcelluar mobile communication system which performs various functions such as a centralized management of resources, a capacity increase, a Base Station Transceiver System(BTS) miniaturization, a synchronization between micro base stations, a dynamic resource management, a softer handover between cells, a grouping and ungrouping of base stations in accordance with a traffic distribution. The microcelluar mobile communication system may increase the subscriber capacity, provide the high reliable service, extend the battery life of a personal station inducing low power communication and assure the radio channel capacity so that the radio multimedia service may be accomplished in the future, by maximizing the utility efficiency of radio frequency resource through cell miniaturization. The microcelluar mobile communication system may be installed efficiently to an indoor, a building underground, an underground tunnel as well as an outdoor, and may compose the single cell also in the indoor.

21 Claims, 13 Drawing figures

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L3: Entry 2 of 5 File: PGPB Jan 1, 2004

DOCUMENT-IDENTIFIER: US 20040001720 A1
TITLE: Satellite-based mobile communication system

CLAIMS:

5. The communications system of claim 4, wherein the switch bank comprises a plurality of optical switches connected in a binary branch configuration connected between the input and the plurality of outputs of the switch bank for at least one of receiving an optical signal at the input of the switch bank and controlling a transmission direction of the free-space optical signals through the holographic aperture by directing the optical signal to one of the plurality of outputs according to the switching of the optical switches, and receiving a free-space optical signal at one of the output ports of the switch bank by controlling the receiving direction of the multiple beam optical array transceiver according to the switching of the optical switches.

6. The communications system of claim 2, further comprising a millimeter wavelength array receive antenna, comprising: a plurality of array antenna elements each capable of detecting focused millimeter wavelength energy and converting the focused millimeter wavelength energy into electrical signals; and a millimeter wavelength lens for focusing incident millimeter energy onto at least one of said array antenna elements; wherein said plurality of array antenna elements conform to an array focal contour of the millimeter wavelength lens.

7. The communications system of claim 2, further comprising a millimeter wavelength array transmit antenna, comprising: a plurality of array antenna elements each capable of converting electrical signals into millimeter wavelength energy and emitting the millimeter wavelength energy; and a millimeter wavelength lens for focusing the emitted millimeter wavelength energy; wherein said plurality of array antenna elements conform to an array focal contour of the millimeter wavelength lens.

25. A wireless communications system having at least one satellite and more than one terminal, comprising: a global positioning system (GPS) receiver contained in a user equipment (UE) for receiving position information pertaining to the terminal; a star tracking system contained in the at least one satellite for determining position information pertaining to the at least one satellite; and at least one multiple beam scanning array transceiver contained in a satellite for wirelessly transceiving the information.

28. The optical array antenna of claim 27, wherein the switch bank comprises a plurality of optical switches connected in a binary branch configuration connected between the input and the plurality of outputs of the switch bank for receiving an optical signal at the input of the switch bank and controlling a transmission direction of the free-space optical signals through the holographic aperture by directing the optical signal to one of the plurality of outputs according to the switching of the optical switches.

30. A millimeter wavelength array receive antenna, comprising: a plurality of array antenna elements each capable of detecting focused millimeter wavelength energy and

converting the focused millimeter wavelength energy into electrical signals; and a millimeter wavelength lens for focusing incident millimeter energy onto said array antenna elements; wherein said plurality of array antenna elements conform to an array focal contour Of the millimeter wavelength lens.

31. A millimeter wavelength array transmit antenna, comprising: a plurality of array antenna elements each capable of converting electrical signals into millimeter wavelength energy and emitting the millimeter wavelength energy; and a millimeter wavelength lens for aiming the emitted millimeter wavelength energy; wherein said plurality of array antenna elements conform to an array focal contour of the millimeter wavelength lens.

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I AI 340/5.1

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Search Results - Record(s) 1 through 2 of 2 returned.

☐ 1. Document ID: US 20010020777 A1

Using default format because multiple data bases are involved.

L5: Entry 1 of 2 File: PGPB Sep 13, 2001

PGPUB-DOCUMENT-NUMBER: 20010020777
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20010020777 A1

TITLE: Methods for controlling a system in a vehicle using a transmitting/receiving transducer and/or while compensating for thermal gradients

PUBLICATION-DATE: September 13, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Johnson, Wendell C.	Signal Hill	CA	US
Du Vall, Wilbur E.	Kimberling City	MO	US
Breed, David S.	Boonton Township	NJ	US

US-CL-CURRENT: 280/735; 180/273

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw De

☐ 2. Document ID: US 6517107 B2

L5: Entry 2 of 2 File: USPT Feb 11, 2003

US-PAT-NO: 6517107
DOCUMENT-IDENTIFIER: US 6517107 B2
** See image for Certificate of Correction **

TITLE: Methods for controlling a system in a vehicle using a transmitting/receiving transducer and/or while compensating for thermal gradients

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw De

Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Terms	Documents

L4 and "gps"	2

Display Format: - Change Format

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L5: Entry 1 of 2 File: PGPB Sep 13, 2001

PGPUB-DOCUMENT-NUMBER: 20010020777
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20010020777 A1

TITLE: Methods for controlling a system in a vehicle using a transmitting/receiving transducer and/or while compensating for thermal gradients

PUBLICATION-DATE: September 13, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Johnson, Wendell C.	Signal Hill	CA	US
Du Vall, Wilbur E.	Kimberling City	MO	US
Breed, David S.	Boonton Township	NJ	US

APPL-NO: 09/827961 [PALM]
DATE FILED: April 6, 2001

RELATED-US-APPL-DATA:
Application 09/827961 is a continuation-in-part-of US application 09/328566, filed June 9, 1999, PENDING
Application is a non-provisional-of-provisional application 60/088386, filed June 9, 1998,

INT-CL-PUBLISHED: [07] B60 R 21/32

US-CL-PUBLISHED: 280/735; 180/273
US-CL-CURRENT: 280/735; 180/273

REPRESENTATIVE-FIGURES: 3

ABSTRACT:

Methods for controlling a vehicle system in which radiation is directed from a transducer into the passenger compartment and is reflected off or modified by an object in the passenger compartment and received by the same or a different transducer. When ultrasonic waves are used, one or more techniques are used to compensate for thermal gradients in the passenger compartment and/or enable the use of a single transducer to send and receive waves, for example, a tubular mounting structure for the transducers, electronic reduction of ringing of the transducer, mechanical damping of the transducer cone, shaped horns, grills and reflectors for the output of the transducers to precisely control the beam pattern, a logarithmic compression amplifier, a temperature compensation method based on change in transducer properties with temperature and/or a dual level network, one level for categorization and the second for occupant position sensing.

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation of U.S patent application Ser. No. 09/328,566 filed Jun. 9, 1999 which claims priority under 35 U.S.C. .sctn.119(e) of U.S. provisional patent application Ser. No. 60/088,386 filed Jun. 9, 1998.

[0002] This application is related to: (i) U.S. patent application Ser. No. 08/505,036 entitled "Vehicle Occupant Position And Velocity Sensor" filed Jul. 21, 1995 (now U.S. Pat. No. 5,653,462), which is a continuation of U.S. patent application Ser. No. 08/040,978 filed Mar. 31, 1993, now abandoned, which in turn is a continuation of U.S. patent application Ser. No. 07/878,571 filed May 5, 1992, now abandoned; (ii) U.S. patent application Ser. No. 08/239,978 entitled "Vehicle Interior Identification and Monitoring System" filed May 9, 1994 (now U.S. Pat. No. 5,829,782); (iii) U.S. patent application Ser. No. 08/474,786 entitled "Optical Identification and Monitoring System Using Pattern Recognition for use with Vehicles" filed Jun. 7, 1995, now U.S. Pat. No. 5,845,000; (iv) U.S. patent application Ser. No. 08/474,783 entitled "Automatic Vehicle Seat Adjuster" filed Jun. 7, 1995, now U.S. Pat. No. 5,822,707; (v) U.S. patent application Ser. No. 08/474,784 entitled "Automatic Vehicle Seat Adjuster" filed Jun. 7, 1995, now U.S. Pat. No. 5,748,473; (vi) U.S. patent application Ser. No. 08/474,782 entitled "Optical Identification and Monitoring System Using Pattern Recognition for Use with Vehicles" filed Jun. 7, 1995 now U.S. Pat. No. 5,835,613; and, (vii) U.S. patent application Ser. No. 08/798,029 entitled "Method of Identifying the Presence and Orientation of an Object in a Vehicle" filed Feb. 6, 1997, now U.S. Pat. No. 5,943,295, which are all incorporated by reference herein.

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Search Results - Record(s) 1 through 5 of 5 returned.

☐ 1. Document ID: US 20050027453 A1

Using default format because multiple data bases are involved.

L3: Entry 1 of 5 File: PGPB Feb 3, 2005

PGPUB-DOCUMENT-NUMBER: 20050027453
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050027453 A1

TITLE: Techniques for surface exploration and monitoring

PUBLICATION-DATE: February 3, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Fort, Justin L.	Round Rock	TX	US
Fort, Charles P.	Round Rock	TX	US

US-CL-CURRENT: 702/14

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 2. Document ID: US 20040001720 A1

L3: Entry 2 of 5 File: PGPB Jan 1, 2004

PGPUB-DOCUMENT-NUMBER: 20040001720
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040001720 A1

TITLE: Satellite-based mobile communication system

PUBLICATION-DATE: January 1, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Krill, Jerry A.	Ellicott City	MD	US
Duncan, Donald D.	Silver Spring	MD	US
Frank, Joe	Potomac	MD	US
Moore, Craig R.	Lisbon	MD	US
Cipriano, Joseph	Springfield	VA	US
Sova, Raymond M.	Owings Mills	MD	US

US-CL-CURRENT: 398/125; 398/121

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw De

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☐ 3. Document ID: US 20020032510 A1

L3: Entry 3 of 5 File: PGPB Mar 14, 2002

PGPUB-DOCUMENT-NUMBER: 20020032510
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020032510 A1

TITLE: Vehicle rearview mirror assembly incorporating a communication system

PUBLICATION-DATE: March 14, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Turnbull, Robert R.	Holland	MI	US
Knapp, Robert C.	Coloma	MI	US
Walstra, Eric J.	Grand Rapids	MI	US
Watson, Alan R.	Buchanan	MI	US
Poe, G. Bruce	Hamilton	MI	US
Roberts, John K.	East Grand Rapids	MI	US
Rumsey, Wayne J.	Holland	MI	US

US-CL-CURRENT: 701/49; 359/844

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw De

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☐ 4. Document ID: US 6980092 B2

L3: Entry 4 of 5 File: USPT Dec 27, 2005

US-PAT-NO: 6980092
DOCUMENT-IDENTIFIER: US 6980092 B2

TITLE: Vehicle rearview mirror assembly incorporating a communication system

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw De

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☐ 5. Document ID: US 6477154 B1

L3: Entry 5 of 5 File: USPT Nov 5, 2002

US-PAT-NO: 6477154
DOCUMENT-IDENTIFIER: US 6477154 B1

TITLE: Microcellular mobile communication system

Full | Title | Citation | Front | Review | Classification | Date | Reference | References | Attachments | Claims | KWMC | Draw De

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Terms	Documents
L2 and gps.clm.	5

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L3: Entry 1 of 5 File: PGPB Feb 3, 2005

PGPUB-DOCUMENT-NUMBER: 20050027453
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050027453 A1

TITLE: Techniques for surface exploration and monitoring

PUBLICATION-DATE: February 3, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Fort, Justin L.	Round Rock	TX	US
Fort, Charles P.	Round Rock	TX	US

US-CL-CURRENT: 702/14 ~18

ABSTRACT:

Techniques for surface exploration and monitoring are presented. In representative embodiments, a system is provided that can perform multiple types of measurements of a surface. For example a single system of survey probes and one or more survey controllers can be used to offer both seismic and electrical measurements. A survey controller can be configured to automatically poll survey probes to obtain identifiers of the probes and determine a relative order the probes. Survey probes can be configured to: (a) collect signals associated with a surface; (b) digitize the signals to form digital data; and (c) store the digital data for later transmission to the survey controller. Relative positions of survey probes can be automatically determined using a transmitting beacon or other techniques. Survey probes can automatically disconnect from a power conduit while measuring a surface property and operate using an internal source of power when disconnected, to reduce noise. The survey controller can be remotely accessible through a computer network for remote control of the survey probes.

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L3: Entry 1 of 5 File: PGPB Feb 3, 2005

DOCUMENT-IDENTIFIER: US 20050027453 A1
TITLE: Techniques for surface exploration and monitoring

Summary of Invention Paragraph:
[0014] Embodiments of the present invention are directed to a distributed, programmable multi-method shallow subsurface exploration system capable of performing synchronized analog to digital conversion of AC and DC electrical signals detected at 2 to 1000 or more points in a probe survey array. The signal conditioning and A/D conversion can be performed locally at an intelligent survey probe which contains electrical components such as a microprocessor, signal conditioning circuitry, short term energy storage, switching devices, and connections to one or more sensors and transducers associated with different exploration survey.

Summary of Invention Paragraph:
[0045] In another respect, the invention involves a system for measuring a property of a surface, the system including a survey controller and a plurality of survey probes that are configured to: (a) collect signals associated with the surface; (b) digitize the signals to form digital data; and (c)store the digital data for later transmission to the survey controller. The survey probes can be configured for performing both electrical and seismic measurements, and the signals can include seismic or electrical signals. The signals associated with the surface can include signals that are generated in response to the surface being stimulated. For example, the signals can be in response to electrical and/or seismic stimulation. In other embodiments, the signals can result from a passive state of the surface. The survey controller and survey probes can be configured to communicate wirelessly. The survey controller can send data to individually program survey probes to generate a stimulus simultaneously or according to another programmed timing scheme. The stimulus can include injection of current. The survey controller can send data to individually program survey probes to form digital data and store the digital data according to a programmed timing scheme. The survey controller and survey probes being can be connected by a first number of conductors, the survey probes can be configured to perform a second number of simultaneous measurements of the surface, and the second number need not be limited by the first number. Such an embodiment and its advantages are described immediately above. The survey controller can be remotely accessible through a computer network (e.g., the Internet) for remote control of the survey controller and the survey probes. The survey probes can be connected to the survey controller through three conductors, two conductors supplying power and a third conductor acting as a communications bus.

Detail Description Paragraph:
[0102] Electrical, vibration, seismic, magnetic, and other sensors connect to signal conditioner 64, through differential connectors 75B and 75C, conductors 83 and 84, through signal conditioner 64, to multiplexor 65 adaptable to apply the difference signal to analog to digital converter 66. SPP 78 operates to perform digital signal processing and filtering of the digitized data operates to store said data into RAM/Flash Memory, accessible to survey controller Survey probe Manager (SPM) 29 on command. Microphone 85 connects through conductor 72 to multiplexor 65. Also referring to FIG. 8, Microphone 85 is coupled to the survey

probe housing 49 coupled to conductive stake 50, adapted to produce electrical signals corresponding to sensed vibrations conducted from the ground 76, through conductive stake 59. Said signals are applied to multiplexor 65 through conductor 72. SPP 78 is operative to apply said signals through multiplexor 65 to ADC 66 for digitizing and filtering, and storing the digitized signals in RAM/Flash memory 62 available for access by SCP 77.

CLAIMS:

10. The system of claim 9, where the survey probes are configured for performing both electrical and seismic measurements, and the signals comprising seismic or electrical signals.

19. A system for measuring a property of a surface, the system comprising: a survey controller; and a plurality of survey probes configured to: (a) collect signals associated with the surface; and (b) sample and hold the signals for later transmission to the survey controller.

20. A system for measuring a property of a surface, the system comprising: a survey controller; and a plurality of individually-addressable survey probes; where the survey controller is configured to: (a) transmit a first signal to individually program survey probes to conduct one or more steps for measuring the property of the surface; and (b) transmit a second signal to cause survey probes to conduct the one or more steps according to a timing sequence.

22. The system of claim 20, the survey controller further configured to transmit a third signal to diagnose survey probes.

26. A system for measuring a property of a surface, the system comprising: a survey controller; and a plurality of individually-addressable survey probes; where the survey controller is configured to transmit a diagnostic signal to individual survey probes to diagnose the individual survey probes.

29. The system of claim 27, further comprising a radio frequency identification (RFID) system coupled to the probes and a Global Positioning System (GPS), the position being determined by combining identification information from the RFID system with positional location from the GPS.

45. The method of claim 44, where the relative position is determined using (a) a transmitting beacon or (b) a radio frequency identification (RFID) system and a Global Positioning System (GPS).

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L7: Entry 1 of 5 File: PGPB Oct 23, 2003

PGPUB-DOCUMENT-NUMBER: 20030197594
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030197594 A1

TITLE: System and method for wireless control of home electronic systems based on location

PUBLICATION-DATE: October 23, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Olson, Thomas R.	Holland	MI	US
Benson, Michael R.	Holland	MI	US
Wright, Thomas S.	Holland	MI	US
Geerlings, Steven L.	Zeeland	MI	US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
Johnson Controls Technology Company				02

APPL-NO: 10/127384 [PALM]
DATE FILED: April 22, 2002

INT-CL-PUBLISHED: [07] H04 Q 1/00, G05 B 19/00

US-CL-PUBLISHED: 340/5.61; 340/5.71
US-CL-CURRENT: 340/5.61; 340/5.71

REPRESENTATIVE-FIGURES: 2

ABSTRACT:

A wireless control system for wireless control of a home electronic system based on the location of the wireless control system includes a transmitter circuit, an interface circuit, and a control circuit. The transmitter circuit is configured to transmit a wireless control signal having control data which will control the home electronic system. The interface circuit is configured to receive navigation data from a navigation data source. The control circuit is configured to receive the navigation data, to determine a distance between the wireless control system and the home electronic system based on the navigation data, and to command the transmitter circuit to transmit the wireless control signal based on the distance.

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DOCUMENT-IDENTIFIER: US 20030197594 A1
TITLE: System and method for wireless control of home electronic systems based on location

Detail Description Paragraph:
[0027] Wireless control system 12 further includes an interface circuit configured to receive navigation data from one or more navigation data sources, such as a GPS receiver 48, a vehicle compass 50, a distance sensor 52, and/or other sources of navigation data, such as gyroscopes, etc. Interface circuit 46 is an electrical connector in this exemplary embodiment having pins or other conductors for receiving power and ground, and one or more navigation data signals from a vehicle power source and one or more navigation data sources, respectively, and for providing these electrical signals to control circuit 30. GPS receiver 48 is configured to receive positioning signals from GPS satellites, to generate location signals (e.g., latitude/longitude/altitude) representative of the location of wireless control system 12, and to provide these location signals to control circuit 30 via interface circuit 46. Compass 50 includes compass sensors and processing circuitry configured to receive signals from the sensors representative of the Earth's magnetic field and to provide a vehicle heading to control circuit 30. Compass 50 may use any magnetic sensing technology, such as magneto-resistive, magneto-inductive, or flux gate sensors. The vehicle heading may be provided as an octant heading (N, NE, E, SE, etc.) or in degrees relative to North, or in some other format. Distance sensor 52 may include an encoder-type sensor to measure velocity and/or position or may be another distance sensor type. In this embodiment, distance sensor 52 is a magnetic sensor coupled to the transmission and configured to detect the velocity of the vehicle. A vehicle bus interface receives the detected signals and calculates the distance traveled based on a clock pulse on the vehicle bus. Other distance and/or velocity sensor types are contemplated, such as, using GPS positioning data.

Detail Description Paragraph:
[0031] Several training steps can be performed by the user. Home electronic system 18 is placed in an "auto open" mode. System 12 is also placed in an "auto open" mode. Both such mode selections can be selected using operator input devices. System 12 is trained to learn the location of home electronic system 18, which may be defined as the location of one or more of a garage door, a security gate, a home lighting or appliance element, a home security system, the location of the home associated with home electronic system 18, the location of antenna 28, or any other location associated with home electronic system 18. In this exemplary embodiment, system 12 learns the location of home electronic system 18 in one of two ways. In a first method, in which data from GPS receiver 48 is available, the user actuates one of switches 34 to change the mode of wireless control system 12 to a training mode. With system 12, and more particularly the antenna of GPS receiver 48, positioned at the location of home electronic system 18, the user actuates one of the switches 34 to command control circuit 30 to take a location reading from GPS receiver 48 and to store this location information in memory, preferably in non-volatile memory, in order to train system 12 to learn the location of home electronic system 18. Alternatively, in a system wherein GPS signals are not available, system 12 uses information from compass 50 and distance sensor 52 to train system 12 to learn the location of home electronic system 18, as will now be

described with reference to FIG. 4.

Detail Description Paragraph:
[0032] Referring to FIG. 4, an exemplary method of training a wireless control system on a vehicle for wireless control of a home electronic system will now be described. At step 62, control circuit 30 identifies whether the user has requested system 12 to enter a training mode to begin training. For example, the user may hold down one, two, or more of switches 34 for a predetermined time period (e.g., 10 seconds, 20 seconds, etc.) to place control circuit 30 in a training mode, or the user may actuate a separate input device (not shown in FIG. 3) coupled to control circuit 30 (FIG. 2) to place system 12 in the training mode. Once training has begun, at step 64, control circuit 30 receives heading signals from compass 50 via interface circuit 46. Control circuit 30 records the vehicle heading in memory, wherein the vehicle heading is received from a GPS receiver or a compass. At step 66, control circuit 30 further receives distance signals representing the distance traveled by the vehicle from distance sensor 52 via interface circuit 46. The distance traveled is recorded in memory. Typically, the heading signals and distance traveled are recorded over one or more turns of vehicle 10 to provide a unique path which can be identified as a path associated with the vehicle approaching home electronic system 18. Heading data and distance data are recorded as the vehicle makes at least one change in heading. Heading data and distance data are recorded in a set of data pairs representing a path beginning some distance from system 18 (e.g., one block, multiple blocks, one mile, several miles, etc.) and ending in the vicinity (e.g., less than a few hundred feet) of system 18.

Detail Description Paragraph:
[0035] Having trained system 12 to identify the location of home electronic system 18 using either GPS positioning signals or by identifying one or more paths to home electronic system 18, or by otherwise training system 12 to learn the proximity or distance between system 12 and system 18, system 12 may then be used in its operative mode to automatically transmit wireless control data based on the proximity between system 12 and system 18. For example, when GPS positioning signals are used, during normal vehicle driving, control circuit 30 continuously monitors the location of the vehicle and, when the vehicle is within a predetermined distance (e.g., 5 miles, 1 mile, 2 blocks, etc.), control circuit 30 commands transceiver circuit 54 to transmit a wireless control signal having control data to control one or more of home electronic systems 18. In this exemplary embodiment, the wireless control signal is transmitted automatically (i.e., without requiring the user to press a button) in two five-second bursts with a three second delay between bursts. Alternatively, the wireless control signal can be transmitted with greater or fewer numbers of bursts and with different durations and delay times.

Detail Description Paragraph:
[0038] According to another exemplary embodiment, wireless control system 12 can be trained to automatically learn the pathway to home electronic system 18. In this embodiment, system 12 continuously monitors travel vectors (i.e., distance and heading) and stores the vectors in a buffer. When system 12 detects a manual actuation of one of input devices 34 to send wireless control signals, system 12 concludes it is at or near system 18. Therefore, system 12 records a predetermined number of previous travel vectors (e.g., three, five, ten, etc.) in memory. The next time system 12 travels the same recorded travel vector pattern, system 12 automatically transmits wireless control data to actuate system 18. System 12 determines whether the same recorded travel vector pattern is traveled by waiting until a first vector of a pattern is found, then comparing the vector of the next turn to the next vector in the pattern, and so on, until all vectors in the pattern have been matched. Pattern matching and position matching (as with GPS distance data) can be used together to verify that the system works effectively. Preferably, system 12 requires the user to select this automatic training feature using one or more of input devices 34 before automatic training will take place. Multiple paths

home can be recorded in this manner. Preferably the travel path includes the turn into the driveway of the home so that automatic transmission of wireless control data can be prevented by stopping the vehicle on the street in front of the house.

Detail Description Paragraph:
[0053] A further feature which may be implemented in any of the exemplary embodiments herein is a feature of sending two or more wireless control signals simultaneously or in sequence, each wireless control signal having control data for a different home electronic system 18. For example, as a vehicle driver approaches the home, the driver may wish to open a security gate, open a garage door, turn on lights in the home, and disable home security system, and the driver may wish to perform all these functions within a short period of time or in response to a single actuation of one of switches 34. According to one embodiment, the method of FIG. 4 includes a step wherein system 12 receives an indication from the user as to which of a plurality of wireless control signals are to be transmitted based on a single event (e.g., the location of the vehicle or based on actuation of one of switches 34). Thus, the user can select one or more wireless control signals which will automatically transmit when the vehicle is within a predetermined distance of the home (as determined by GPS signals or the predetermined heading/distance patterns).

Detail Description Paragraph:
[0061] Utilizing the feature of an "up only" mode, in an alternative embodiment of system 12, transceiver circuit 54 is configured to transmit a wireless control signal having control data which will control a garage door opener to open if the garage door is closed and to remain open if the garage door is already open when the wireless control signal is received. During training in this or any other embodiments, the location of system 12 can be recorded from GPS satellites 48 during the training operation. Thus, control circuit 30 is configured to record the location of the wireless control system 12 in response to actuation of operator input device 32.

Detail Description Paragraph:
[0063] While the exemplary embodiments illustrated in the FIGS. and described above are presently preferred, it should be understood that these embodiments are offered by way of example only. For example, alternative embodiments may be suitable for use in the commercial market, wherein office lights or security systems or parking garage doors are controlled. Further, navigation data can take many forms other than GPS data, compass data, and distance traveled data. Accordingly, the present invention is not limited to a particular embodiment, but extends to various modifications that nevertheless fall within the scope of the appended claims.

CLAIMS:

1. A wireless control system for wireless control of a home electronic system based on the location of the wireless control system, comprising: a transmitter circuit configured to transmit a wireless control signal having control data which will control the home electronic system; an interface circuit configured to receive heading and distance data from a compass and distance sensor, respectively; and a control circuit coupled to the transmitter circuit and the interface circuit configured to receive the heading and distance data, to determine a proximity between the wireless control system and the home electronic system based on the heading and distance data, and to command the transmitter circuit to transmit the wireless control signal based on the proximity.

5. The wireless control system of claim 4, wherein the control circuit is configured to store a plurality of paths to the home electronic system, and the control circuit is configured to command the transmitter to transmit the wireless control signal when any one of the plurality of paths is traversed by the wireless control system.

6. The wireless control system of claim 1, further comprising a receiver circuit configured to receive a wireless signal, wherein the control circuit is configured to identify and store a data code on the wireless signal, wherein the wireless control signal transmitted by the transmitter circuit includes the stored data code.

7. The wireless control system of claim 1, wherein the control circuit is configured to automatically learn a pathway to the home electronic system by monitoring compass and heading data and detecting manual actuation of an input device, wherein the input device is configured for manual transmission of the wireless control signal.

10. The method of claim 8, further comprising receiving an indication from the user as to which of a plurality of wireless control signals is to be transmitted based on the location of the vehicle.

11. The method of claim 8, further comprising: receiving a wireless signal having a data code; and identifying and storing the data code on the wireless signal, whereby the wireless control system can wirelessly control the home electronic system by transmitting the data code of the wireless signal.

12. A method of wirelessly controlling a home electronic system based on the location of a vehicle, comprising: receiving heading signals from a navigation data source; receiving distance signals representing the distance traveled by the vehicle; comparing the heading and distance signals to predetermined heading and distance data; and transmitting a wireless control signal having control data which will control the home electronic system when the heading and distance signals indicate that the vehicle is in the vicinity of the home.

15. The method of claim 12, wherein the step of transmitting includes transmitting a plurality of wireless control signals having different control data which will control a plurality of home electronic systems when the heading and distance signals indicate that the vehicle is near the home.

17. The method of claim 12, wherein the predetermined heading and distance data are determined by: monitoring travel vectors of the home electronic system; receiving a user command to transmit the wireless control signal; and recording a plurality of travel vectors monitored prior to the received user command.

18. A transmitter for wirelessly controlling a plurality of home electronic systems, comprising: a memory configured to store a plurality of control data messages, each control data message configured to control a different home electronic system; a transmitter circuit; and a control circuit configured to command the transmitter circuit to transmit a plurality of wireless control signals in response to a single event, each wireless signal containing a different control data message.

21. The transmitter of claim 20, further comprising an operator-actuatable switch coupled to the control circuit, wherein the control circuit is user-programmable such that the switch causes the transmitter to send a first wireless control signal having a first control data message and the control circuit automatically sends a second wireless control signal having a second control data message different than the first control data message when the control circuit determines that the transmitter is within a predetermined proximity of the home electronic system.

24. The transmitter of claim 18, wherein the control circuit is configured to be programmed by the user as to which of the wireless control signals are to be transmitted in response to the single event.

25. The transmitter of claim 18, further comprising a plurality of operator-actuatable switches coupled to the control circuit, wherein the control circuit is user-programmable such that a first of the switches causes the transmitter to send a first wireless control signal and a second of the switches causes the transmitter to send second and third wireless control signals simultaneously or in sequence.

26. A wireless control system for wireless control of a garage door opener based on the location of the wireless control system, comprising: a transmitter circuit configured to transmit a wireless control signal having control data which will control the garage door opener; an interface circuit configured to receive navigation signals from a navigation data source; a control circuit coupled to the transmitter circuit and the interface circuit configured to receive the navigation signals and to command the transmitter circuit to transmit the wireless control signal based on the proximity between the wireless control system and the home electronic system; a receiver circuit configured to receive a wireless signal, wherein the control circuit is configured to identify a data code on the wireless signal and to store the data code in memory, wherein the wireless control signal transmitted by the transmitter circuit includes the stored data code; and an operator input device, wherein the control circuit is configured to identify and store the data code on the wireless signal and to record the location of the wireless control system based on the received navigation signals in response to one actuation of the operator input device.

29. An auxiliary wireless control system for providing "up only" functionality to an existing garage door opener configured to open and close a garage door, comprising: a housing; a garage door state sensor couplable to the garage door and configured to detect a state of the garage door; a receiver coupled to the housing configured to receive a wireless control signal from a remote transmitter; a control circuit coupled to the housing configured to detect a state of the garage door based on data from the garage door state sensor, to receive the wireless control signal from the remote transmitter, and to generate an "open door" command only when the garage door is not already open; and an interface circuit coupled to the housing configured to provide the "open door" command from within the housing to the existing garage door opener outside the housing.

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